SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010

PTFE Fluoropolymer Resin

Version 2.3
Revision Date 26.02.2013

This SDS adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PTFE Fluoropolymer Resin
Types : NXT70, 70-J, NXT75, NXT85, 170JS, TE6462, TE6472

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Resin for moulding and/or extrusion

1.3. Details of the supplier of the safety data sheet

Company : Du Pont de Nemours (Nederland) B.V.
Baanhoekweg 22
NL-3313 LA Dordrecht
Netherlands

Telephone : +31-(0)-78-630-1011
Telefax : +31-(0)-78-630-1181
E-mail address : sds-support@che.dupont.com

1.4. Emergency telephone number

Emergency telephone number : +44 (0) 8456 006 640

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

This substance is not classified as dangerous according to Directive 67/548/EEC.

2.2. Label elements

Not a classified substance or mixture according to Regulation (EC) No. 1272/2008.

2.3. Other hazards

No hazards to be specially mentioned.

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Registration number</th>
<th>Classification according Directive</th>
<th>Classification according Regulation 1272/2008 (CLP)</th>
<th>Concentration</th>
</tr>
</thead>
</table>

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Section 3: Transport information

3.2. Mixtures

not applicable

The above products are REACH compliant; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

Section 4: First aid measures

4.1. Description of first aid measures

General advice: No hazards which require special first aid measures. Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician.

Skin contact: Do not peel polymer from the skin. Cool skin rapidly with cold water after contact with molten material. Wash off with soap and water. Consult a physician.

Eye contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Get medical attention immediately.

Ingestion: Not a probable route of exposure. However, in case of accidental ingestion, call a physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Polymer fume fever

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Carbon dioxide (CO2), Dry powder, Foam, Water

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting: Hazardous combustion products:

: Carbon oxides
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5.3. Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Wear suitable protective equipment. Wear neoprene gloves during cleaning up work after a fire.

Further information: Protect from hydrogen fluoride fumes which react with water to form hydrofluoric acid.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Ventilate the area. Refer to protective measures listed in sections 7 and 8. Material can create slippery conditions.

6.2. Environmental precautions

Environmental precautions: No special environmental precautions required.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up: Sweep up and shovel into suitable containers for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

6.4. Reference to other sections

For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling: For personal protection see section 8. When opening containers, avoid breathing vapours that may be emanating. Avoid breathing dust. Avoid contamination of cigarettes or tobacco with dust from this material. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. In case of insufficient ventilation, wear suitable respiratory equipment.

Advice on protection against fire and explosion: Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place. Protect from contamination.

Advice on common storage: No special restrictions on storage with other products. Keep away from tobacco products. For further information see Section 10 of the safety data sheet.

Other data: Stable under recommended storage conditions.

7.3. Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

8.2. Exposure controls

Engineering measures: Ensure adequate ventilation, especially in confined areas. Good general ventilation should be provided to keep dust concentrations below the exposure limits. Local exhaust ventilation should be employed to minimize airborne contamination.

Eye protection:
- Solid form: Safety glasses with side-shields conforming to EN166
- Molten form: Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of material.

Hand protection: Material: Heat resistant gloves
Protective gloves (Type: Kevlar® - heat resistant, use possible until worn out)

Skin and body protection: If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear.

Hygiene measures: Regular cleaning of equipment, work area and clothing. Wash hands before breaks and at the end of workday. Do not contaminate tobacco products. General precaution for all plastics and elastomers: Do not breathe fumes evolved from hot polymer.

Respiratory protection: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Half mask with a particle filter FFP2/FFP3 (EN149)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form: powder
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>white</td>
</tr>
<tr>
<td>Odour</td>
<td>none</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>327 - 342 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>530 - 550 °C , Method: ASTM D 1929</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>520 - 560 °C , Method: ASTM D 1929</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>not applicable</td>
</tr>
<tr>
<td>Density</td>
<td>2.14 - 2.20 g/cm³</td>
</tr>
<tr>
<td>Solubility/qualitative</td>
<td>insoluble</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
</tr>
</tbody>
</table>

**9.2. Other information**

no data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No decomposition if stored and applied as directed.

**10.2. Chemical stability**

The product is chemically stable.

**10.3. Possibility of hazardous reactions**

During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat. Large molten masses may give off hazardous gases. Stable under normal conditions.

**10.4. Conditions to avoid**

To avoid thermal decomposition, do not overheat. Abnormally long processing time or high temperatures can produce irritating and toxic fumes. Stable under normal conditions.

**10.5. Incompatible materials**

Finely divided aluminium  
Powdered metals  
Potent oxidizers like fluorine (F2) and related compounds  
Contact with incompatible materials can cause fire and explosion.

**10.6. Hazardous decomposition products**

Hazardous thermal decomposition products may include:  
Carbon oxides  
Acid fluorides  
Fluorinated compounds
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

- Polytetrafluoroethylene
  LD50 / rat : > 11,280 mg/kg

Acute inhalation toxicity

The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

Skin irritation

- Polytetrafluoroethylene
  rabbit
  Classification: Not classified as irritant
  Result: No skin irritation

  human
  Classification: Not classified as irritant
  Result: No skin irritation

Sensitisation

- Polytetrafluoroethylene
  human
  Classification: Not a skin sensitizer.
  Result: Does not cause skin sensitisation.
  Patch test on human volunteers did not demonstrate sensitisation properties.

Repeated dose toxicity

- Polytetrafluoroethylene
  Oral - feed rat
  No toxicologically significant effects were found.

Mutagenicity assessment

- Polytetrafluoroethylene
  Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity assessment

- Polytetrafluoroethylene
  Not classifiable as a human carcinogen.

Toxicity to reproduction assessment
PTFE Fluoropolymer Resin

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish

• Polytetrafluoroethylene
  The substance is a polymer and is not expected to produce toxic effects.

12.2. Persistence and degradability

no data available

12.3. Bioaccumulative potential

no data available

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Like most thermoplastic plastics the product can be recycled. If recycling is not practicable, dispose of in compliance with local regulations. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

ADR

14.1. UN number:  not applicable
14.2. UN proper shipping name: not applicable
14.3. Transport hazard class(es): not applicable
14.4. Packing group:  not applicable
14.5. Environmental hazards:  none
14.6. Special precautions for user:
  Not classified as dangerous in the meaning of transport regulations.
IATA_C
14.1. UN number: not applicable
14.2. UN proper shipping name: not applicable
14.3. Transport hazard class(es): not applicable
14.4. Packing group: not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
   Not classified as dangerous in the meaning of transport regulations.

IMDG
14.1. UN number: not applicable
14.2. UN proper shipping name: not applicable
14.3. Transport hazard class(es): not applicable
14.4. Packing group: not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
   Not classified as dangerous in the meaning of transport regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2. Chemical Safety Assessment
no data available

SECTION 16: Other information

Restrictions on use

Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.

Further information

The DuPont Oval Logo is a registered trademark of E.I. du Pont de Nemours and Company.
Before use also read the following bulletin(s): Guide for the Safe Handling of Fluoropolymer Resins published by PlasticsEurope., For further information contact the local DuPont office or DuPont's nominated distributors.

Significant change from previous version is denoted with a double bar.
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.